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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/219,195	12/21/98	LEE F	SA997115

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EXAMINER	
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ART UNIT	**PAPER NUMBER**
2754	3

DATE MAILED: 04/04/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No.	Applicant(s)	
	09/219,195	LEE ET AL.	
	Examiner	Art Unit	
	Franklin D. Altman	2754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

1)☒ Responsive to communication(s) filed on *21 December 1998* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) *1-13* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claims *1-37* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *21 December 1998* is/are objected to by the Examiner.

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a)☐ All b)☐ Some * c)☐ None of the CERTIFIED copies of the priority documents have been:

1.☐ received.

2.☐ received in Application No. (Series Code / Serial Number) _____ .

3.☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

14) ☒ Notice of References Cited (PTO-892)
15) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
16) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
17) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
18) ☐ Notice of Informal Patent Application (PTO-152)
19) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-13, drawn to a lead routing module, classified in class 439, subclass 55.

II. Claim 14-37, drawn to suspension assembly, classified in class 360, subclass 234.5.

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require for example "a first set of electrical contact regions positioned on a nonconducting body and a second set of electrical contact regions positioned on said nonconducting body." The subcombination has separate utility such as telephone switchboard circuit, as evidenced by claim 21, or a suspension assembly not including a "slider" or a "microactuator", for instance.

During a telephone conversation with Abdy Raissinia on 3/29/2000 a provisional election was made with traverse to prosecute the invention of Group II, claims 14-37. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-13 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

Drawings

This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Claim Objections

Claims 30 and 37 are objected to because of the following informalities: Line 2 of claim 30 and line 2 of claim 37 have a misspelling "orthongally" which can possibly be corrected to - -orthogonally- -. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 14-37 are rejected under 35 U.S.C. 102(e) as being anticipated by Simmons et al (U.S. Patent 5,862,010).

As per claim 14:

Simmons et al discloses a suspension assembly (80) comprising:

A slider/head assembly (30);

A suspension (32); and

An interconnect module (120) coupled between said suspension (32) and said slider/head assembly (30) to route one or more data signals between said suspension (32) and said slider/head assembly (30).

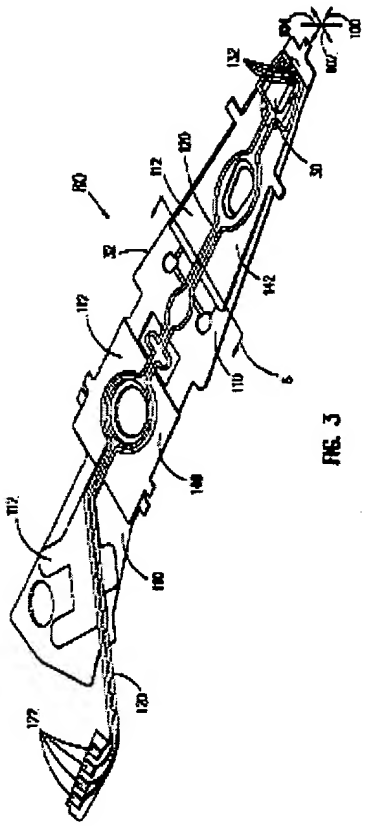
As per claims 15, 19, 25, 28, 32 and 35:

Simmons et al's suspension (32) is an integrated lead suspension (32).

As per claim 16, 29, 33 and 36:

Simmons et al's suspension (32) is configured for in-line mounting of said slider/head assembly (30). See Simmons et al's Figure 3 shown on the following page.

SIMMONS ET AL'S FIGURE 3



As per claim 17, 30 and 37:

Simmons et al's slider/head assembly (30) is orthogonally mounted onto said suspension (32). See Simmons et al's Figure 3 shown on the previous page.

As per claim 18:

Simmons et al further discloses:

A microactuator ("microactuator", see column 6, line 32);

An interconnect module (120) coupled between the suspension (32) and said microactuator ("microactuator", see column 6, line 32) to route one or more signals between said suspension (32) and said microactuator ("microactuator", see column 6, line 32).

As per claim 20:

Simmons et al's suspension (32) includes a first set of termination leads (132) coupled to a slider/head assembly (30) and a second set of termination leads (122) coupled to said interconnect module (120).

As per claim 21:

Simmons et al discloses an assembly (80) comprising:

A first device (30 or "microactuator", see column 6, line 32);

A second device (32); and

An interconnect device (120) coupled between said first (30 or "microactuator", see column 6, line 32) and second (32) devices to route one or more signals between said first (30 or "microactuator", see column 6, line 32) and second (32) devices.

As per claim 22:

Simmons et al discloses the first device (30) is a slider/head assembly (30) and said second device (32) is a suspension (32);

As per claim 23:

Simmons et al discloses the first device ("microactuator", see column 6, line 32) is a microactuator ("microactuator", see column 6, line 32) and said second device (32) is a suspension (32).

As per claim 24:

Simmons et al discloses a storage device (10) comprising:

A disk (12);

A spindle motor (14) positioned to support and rotate said disk (12);

A suspension assembly (80) including an interconnect module (120) coupled between a slider/head assembly (30) and a suspension (32) to route one or

more data signals between said suspension (32) and said slider/head assembly (30); and

An actuator (142) coupled to said suspension assembly (80) and operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for reading and/or writing operations. See column 4, lines 5-9.

As per claim 26:

Simmons et al's suspension (32) is configured for in-line mounting of said slider/head assembly (30). See Simmons et al's Figure 3 shown on previous page 6 of this office action.

As per claim 27:

Simmons et al discloses a test platform (10) for disks (12). Inherently, Simmons system (10) is a test platform in that each time a read or write operation is attempted it would likely succeed or pass but could fail.

Simmons et al's test platform (10) comprises:

A spindle motor (16) for rotating a disk (12) during a test operation (read/write operation); and

A test platform (10) including a suspension assembly (80) coupled to an actuator (142), said actuator (142) operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for said test

operation (read/write operation), said suspension assembly (80) including an interconnect module (120) coupled between a slider/head assembly (30) and a suspension (32) to route one or more data signals between said suspension (32) and said slider/head assembly (30).

As per claim 31:

Simmons et al discloses:

A disk (12);

A spindle motor (16) positioned to support and rotate said disk (12);

A suspension assembly (80) including an interconnect module (120) coupled between a suspension (32) and a microactuator ("microactuator", see column 6, line 32) to route data signals between said suspension (32) and said microactuator ("microactuator", see column 6, line 32); and

An actuator (includes 42) coupled to said suspension assembly (80) and operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for reading and/or writing operations.

As per claim 34:

Simmons et al discloses a test platform (10) for disks (12). Inherently, Simmons disk drive is a test platform in that each time a read or write operation is attempted it would likely succeed or pass but could fail.

Simmons et al's test platform (10) comprises:

A spindle motor (16) for rotating a disk (12) during a test operation (read/write operation); and

A test platform (10) including a suspension assembly (80) coupled to an actuator (includes 42), said actuator (includes 42) operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for said test operation (read/write operation), said suspension assembly (80) including an interconnect module (120) coupled between a suspension (32) and a microactuator ("microactuator", see column 6, line 32) to route one or more data signals between said suspension (32) and said microactuator ("microactuator", see column 6, line 32).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 18-20, 23 and 31-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simmons et al in view of Yan (U.S. Patent 6,025,988).

Assuming *per arguendo* that Simmons et al lacks an explicit teaching of:

1) An actuator coupled to said suspension assembly (80) and operable to position said suspension assembly (80) above said disk (12) to access said disk (12) for reading and/or writing operations.

2) An interconnect module (120) coupled between the suspension (32) and a microactuator to route one or more signals between said suspension (32) and said microactuator.

Yan discloses in the same field of endeavor:

1) An actuator (in lines 20-21 of column 1, for instance) coupled to said suspension assembly (10) and operable to position said suspension assembly (10) above said disk to access said disk for reading and/or writing operations.

2) An interconnect module (includes 26) coupled between the suspension (12) and a microactuator (24) to route one or more signals between said suspension (12) and said microactuator (24).

This is taught by Yan (column 2, line 47) to improve the way of connecting standard read/write circuitry. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have added the

actuator/microactuator of Yan to the suspension assembly and interconnect module of Simmons et al.

The rationale is as follows: one of ordinary skill in the art would have been motivated to have added the actuator/microactuator of Yan to the suspension assembly and interconnect module of Simmons et al., since such improves the way of connecting standard read/write circuitry.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jurgenson et al (U.S. Patent 5,657,188), Krinke et al (U.S. Patent 5,898,544), Knight et al (U.S. Patent 5,867,347), Shum (U.S. Patent 5,818,662), and Berg et al (U.S. Patent 5,856,896) all have conventional suspension assemblies with microactuators.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Franklin D. Altman whose telephone number is (703) 305-7494. The examiner can normally be reached on mon-fri, 6:30 am - 4:00pm.

The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-9051 for formal communications or (703) 305-7201 for informal communications, which should be so designated.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Franklin D. Altman, III

CRAIG A. RENNER
PRIMARY EXAMINER